



**NORDEN TECHLAB**  
(O P C) Private Limited

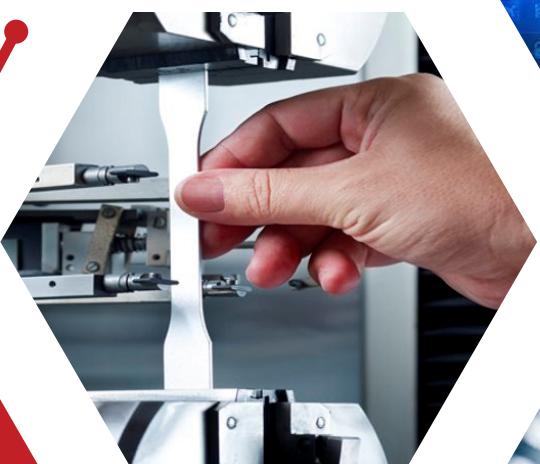


**NABL Accredited**

Laboratory of Material Testing

Compliance with ISO 17025: 2017

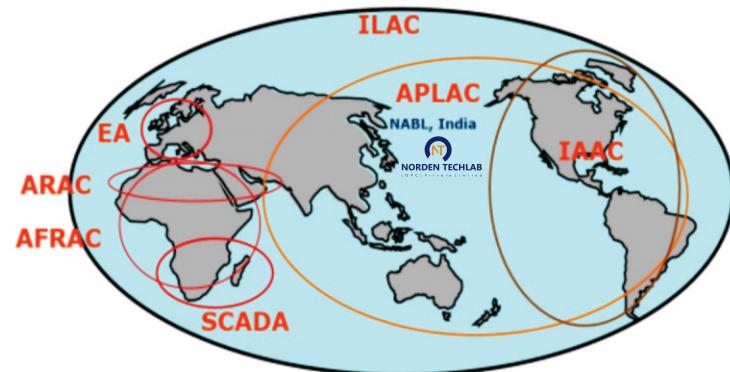
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## WHO GOVERNS US?

# House of metal testing laboratory

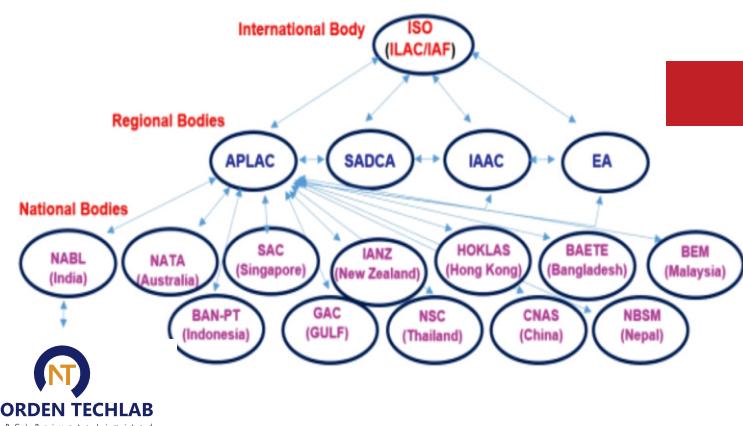
## ACCREDITATION



## ABOUT US

Founded in 2019, Norden Techlab (NT) has been operating successfully in the field of material testing. Initially launched as a proprietorship, the company continues to thrive under this structure.

The CEO oversees all operations of the testing laboratory, which functions as a core department of NT. Our lab is staffed with experienced and qualified engineers, and we have a dedicated marketing team for handling sales activities.



## OUR VISION



Our vision is to become the preferred global partner in the field of testing and validation by supporting our clients in delivering exceptional products, services, and solutions.

## Testing Ranges

### Tensile Testing

Products include ferrous and non-ferrous alloys such as steel, stainless steel, cast iron, copper, aluminum, brass, nickel, and titanium, available in forms like sheets, plates, wires, round bars, shapes, tubes, and pipes.

Tensile testing is a mechanical method used to assess a material's strength and ductility. It involves applying force to a sample until it fractures, revealing important mechanical properties of the material.

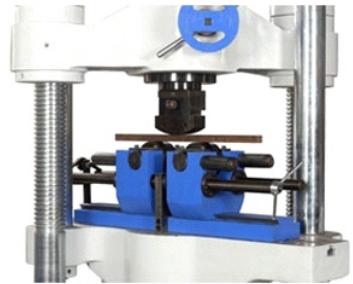
Specific Test Performed	Test Method
Tensile Strength	IS 1608-Part 1 ISO 6892 - 1
Yield Strength	ISO 4136 ASTM A 370
Proof Strength (0.2 % & 1% )	ASTM E8/E8M ASTM B 557M ASTM B557
% Elongation	AWS B 4.0 ASME Sec – IX
% Reduction of Area	AWS D1.1 / D1.1M



## Bend Test

The bend test, or flexural test, evaluates a material's ductility and its resistance to fracturing under bending stress.

Specific Test Performed	Test Method
Bend Test	IS 1599 ISO 7438 ISO 5173 ASTM E290 ASTM A370 ASTM E190 ASME SEC IX AWS D1.1 / D1.1M



## Hot Tensile - Elevated Temperature Tensile Test

Temperature Range: 50 to 900°C

These mechanical properties help describe how metals behave under stress, particularly regarding their strength and ductility.

Understanding how metal properties change with temperature is crucial for their application in various industries.

To examine how metals respond to elevated temperatures, tensile tests are conducted across a range of high-temperature conditions.

Specific Test Performed	Test Method
Tensile Strength	IS 1608-Part 2 ISO 6892 - 2 ASTM E 21
Yield Strength	
Proof Strength (0.2 % & 1% )	
% Elongation	
% Reduction of Area	



## Charpy Impact Testing

The Charpy impact test is a standardized method used to determine the amount of energy a material can absorb during fracture.

Specific Test Performed	Test Method
Charpy Impact Test (25°C to -196 °C)	IS 1757 (Pt-1) ISO 148-1 ASTM A 370 ASTM E23 ASTM 923 Method B



Specific Test Performed	Test Method
Rockwell Hardness Test	IS 1586 (Pt-1) ISO 6508- 1 ASTM E18 ASTM A 370
Vickers Hardness Test	IS 1501(Pt-1) ISO 6507-1 ASTM E92
Brinell Hardness Test	IS 1500(Pt-1) ISO 6506-1 ASTM E 10 ASTM 370
Portable Hardness Test	ASTM E 110



## Welding Qualification Testing as per ASME, AWS, and ISO standards.



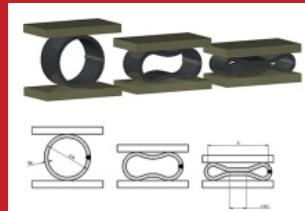
### Flaring Test

Used to assess a tube's ability to expand without cracking.



### Flattening Test

Checks the ductility and strength of pipes by compressing them between two plates.



### Fracture Test

Determines a material's behavior and resistance when subjected to breaking force



## Metallography test

Metallography involves examining the microstructure of metals and alloys, typically using microscopic techniques. This analysis is vital for understanding material properties such as grain size, crystal structure, and identifying defects like cracks or non-metallic inclusions. Metallography is a key tool in industries such as aerospace, automotive, and general manufacturing.



Specific Test Performed	Test Method	
Micro structure	IS 7754	ASTM E1077
Macrostructure	IS 11371, IS 4163	ASTM E 381, ASTM E45
Graphite in cast iron (nodular cast iron, grey cast iron & malleable cast iron)	IS 4748, IS 6396	ASME – SEC IX
Grain size (by ASTM chart comparison method)	ISO 945-1, ISO 4967	ASM METAL HAND BOOK Vol.9
Decarburization Depth	ISO 17639, ISO 3887	AWS D1.1/D1.1M
Inclusion Rating	ISO 17781	AWS D1.6/D1.6M
	ASTM A 247, ASTM A 923	
	ASTM E 112, ASTM E 562	

## Corrosion test

Corrosion testing determines a material's susceptibility to corrosion. These tests help evaluate a material's resistance to specific types of corrosion, including pitting and intergranular corrosion.

Specific Test Performed	Test Method
Intergranular corrosion test (IGC)	ISO 3651 Method A,B & C ASTM A 262 Practice A, B, C & E
Pitting Corrosion	ASTM G48 Method A ASTM G28 Method A ASTM A 923 Method C



## Chemical Testing

Materials tested include:

- Plain carbon and low-alloy steels
- Stainless steels and high chromium/nickel steels
- Tool steels
- Maraging steels
- Cast irons and SG iron
- Ni-Hard and Ni-Resist alloys
- Nickel-based alloys such as Monel, Inconel, and Hastelloy



### Address

Address: No. 19, SF No. 476/4,  
Ground Floor, Lakshmi Garden 3A,  
Balaji Industrial Estate, Keeranatham Post,  
Coimbatore – 641035



### Phone

87546 93384  
96980 82344  
88700 11631



### E-mail

admin@nordentechlab.com